

1. (Amended) A modular shoulder prosthesis for replacement of the humeral head of a humerus, comprising:

a stem having a distal end for insertion in the superior end of the medullary cavity of the humerus and a proximal end for engagement with a humeral head;

a head for positioning in a glenoid cavity, the head having, on one side, a generally spherical surface formed about an axis and, on the other side, a generally flat face bounding the spherical surface;

a bore formed in the flat head face, the bore including an axis which is non-coaxial with the axis of the head;

C1 a connecting member for connecting the head and stem, the connecting member having a first portion and a second portion, the first portion configured for insertion into the bore of the head, insertion of the first portion into the bore of the head achieving a first degree of eccentricity, the second portion being non-coaxial with and extending from the first portion, wherein the first portion of the connecting member is configured for rotatable insertion in the axial bore of the humeral head to enable adjustment of the second portion of the connecting member with respect to the axis of the spherical portion, thereby providing an infinite number of second degrees of eccentricity; and

a locking member for locking the connecting member non-rotatably within the bore, in any of said infinite number of positions.

2 (cancelled)

3 (cancelled)

4. (Original) The prosthesis of claim 1 wherein the second portion of the connecting member is a protruding pin having a Morse taper.

5. (Original) The prosthesis of claim 1 wherein the second portion of the connecting member is configured as an element of a dove-tail slot connection.
6. (Original) The prosthesis of claim 1 wherein the bore of the humeral head and the locking member are threaded for engagement.
7. (Original) The prosthesis of claim 1 wherein the locking member is a locking ring having a bore therethrough with an inner surface and a peripheral shoulder engaging the first portion of the connecting member.
8. (Amended) The prosthesis of claim [[7]] 20 wherein at least one groove is provided along the inner surface of the ring for receiving a tool for adjusting the ring.
9. (Previously Presented) The prosthesis of claim 1 wherein the locking member includes a tool-engaging surface for receiving a tool for adjusting the locking member.
10. (Original) The prosthesis of claim 1 further comprising a detent formed on the first portion of the connecting member and a series of recesses formed within the axial bore of the humeral head for engaging the detent to enable the connecting member to be rotatably adjusted with respect to the humeral head into predetermined positions.
11. (Cancelled)
12. (Currently Amended) A modular humeral head for replacement of the humeral head of a humerus, comprising:

a head for positioning in a glenoid cavity, the head having, on one side, a generally spherical surface formed about an axis and, on the other side, a generally flat face bounding the spherical surface;

a bore formed in the flat head face, the bore including an axis which is non-coaxial with the axis of the head;

a connecting member for connecting the head and stem, the connecting member having a first portion and a second portion, the first portion configured for insertion into the bore of the head, insertion of the first portion into the bore of the head achieving a first degree of eccentricity, the second portion being non-coaxial with and extending from the first portion, wherein the first portion of the connecting member is configured for rotatable insertion in the axial bore of the humeral head to enable adjustment of the second portion of the connecting member with respect to the axis of the spherical portion, thereby providing an infinite number of second degrees of eccentricity; and

a locking member for locking the connecting member non-rotatably within the bore, in any of said infinite number of positions.

13. (Previously Presented) The prosthesis of claim 12, wherein the second portion of the connecting member is a protruding pin having a Morse taper.

14. (Previously Presented) The prosthesis of claim 12, wherein the second portion of the connecting member is configured as an element of a dove-tail slot connection.

15. (Previously Presented) The prosthesis of claim 12, wherein the bore of the humeral head and the locking member are threaded for engagement.

16. (Previously Presented) The prosthesis of claim 12, wherein the locking member is a locking ring having a bore therethrough with an inner surface and a peripheral shoulder engaging the first portion of the connecting member.

17. (Previously Presented) The prosthesis of claim 16, further including at least one groove along the inner surface of the ring for receiving a tool for adjusting the ring.

18. (Previously Presented) The prosthesis of claim 12, wherein the locking member includes a tool-engaging surface for receiving a tool for adjusting the locking member.

C1  
19. (Previously Presented) The prosthesis of claim 12, further comprising a detent formed on the first portion of the connecting member and a series of recesses formed within the axial bore of the humeral head for engaging the detent to enable the connecting member to be rotatably adjusted with respect to the humeral head into predetermined positions.

20. (New) A modular shoulder prosthesis for replacement of the humeral head of a humerus, comprising:

a stem having a distal end for insertion in the superior end of the medullary cavity of the humerus and a proximal end for engagement with a humeral head;

a head for positioning in a glenoid cavity, the head having, on one side, a generally spherical surface formed about an axis and, on the other side, a generally flat face bounding the spherical surface;

a bore formed in the flat head face, the bore including an axis which is non-coaxial with the axis of the head;

a connecting member for connecting the head and stem, the connecting member having a first portion and a second portion, the first portion configured for insertion into

the bore of the head, insertion of the first portion into the bore of the head achieving a first degree of eccentricity, the second portion being non-coaxial with and extending from the first portion, wherein the first portion of the connecting member is configured for rotatable insertion in the axial bore of the humeral head to enable adjustment of the second portion of the connecting member with respect to the axis of the spherical portion, thereby providing a second degree of eccentricity; and

C) a locking member for locking the connecting member non-rotatably within the bore, wherein the locking member is a locking ring having a bore therethrough with an inner surface and a peripheral shoulder engaging the first portion of the connecting member.

21. (Canceled).